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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/583,487

06/07/2007

Cedric Buchon

979-236

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39600

7590

03/17/2009

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EXAMINER

PATEL, VISHAL I

ART UNIT

PAPER NUMBER

4122

MAIL DATE

DELIVERY MODE

03/17/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/583,487	Applicant(s) BUCHON, CEDRIC	
	Examiner VISHAL I. PATEL	Art Unit 4122	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/15/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 10 contains the trademark/trade name Zeonex. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe polycarbonate or Cyclo Olefin Polymer and, accordingly, the identification/description is indefinite.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiao et al. (US Pat Num.: 5415817) (hereinafter Shiao) in further view of Spitzer et al. (US Pat Num.: 6023372) (hereinafter Spitzer) in further view of Bakalar (US Pat Num: 4778632) (hereinafter Bakalar)

Referring to claim 1 Shiao teaches an improved injection/compression molding process for the manufacturing of high quality concave optical lenses of thin thickness. A thermoplastic material is injected into a mold cavity of an injection/compression molding machine; the mold cavity is designed to have adjustable thickness and is initially set at a thickness greater than the lens to be produced. (Abstract)

Shiao does not expressly teach the mold dimensions, orifice dimensions and injection flow rate

Spitzer teaches "Light from the imaging assembly is relayed via the optical element 14 through the eyeglass lens 24 to the user's eye. The optical element 14 comprises a transparent fixture or relay 26 and an eyepiece assembly 28 which, in the embodiment shown in FIGS. 1 through 3, comprises a mirror 30 and lens 32." (Col 3; 41-45) and "The optical element 14 is preferably rectangular in cross section, as shown

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in FIG. 6A.” (Col4; Ln 11-12) and “The lens 32 modifies the vergence of the rays from the imaging assembly 12 so that the image can be viewed with magnification and with the image formed at a comfortable distance between about 25 cm and infinity, depending on lens positions and focal lengths.” (Col 4; Ln 28-32).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the dimension taught by Spitzer and using the injection/compression molding process taught by Shiao in fabricating a light duct. The rational to do so would have been to produce a lens with reduced production time and cost, and without the occurrence of birefringence and/or the need for expensive external heating of cooling requirement (Shiao; Col 4; Ln 5-9).

Shiao nor Spitzer expressly disclose the orifice domination and injection flow rate

Bakalar teaches a further desirable characteristic is a thermoplastic gate that is as large as possible so that the injected resin may flow as freely as possible to the molding space, limited only by the window width. (Col 2; Ln 21-25) and “Because gate 26 is larger than the window width defined by mold 18, the window width determines the resin fill speed. As is apparent, then, by adjusting the window width the resin fill speed can be controlled for the particular lens to be molded and, accordingly, a lens having a minimum of stress can be produced” (Bakalar Col 5; Ln 3-5; Fig 2) Bakalar draws attention to connection between width of the gate and resin flow speed. The larger the gate the slower and flow speed hence reduction in flow stress.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use dimension taught by Spitzer, the orifice gate and resin fill

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speed taught by Bakalar and using the injection/compression molding process taught by Shiao in fabricating a light duct. The rational to do so would have been to allow the injected mold to flow as freely as possible and producing a lens having a minimum stress (Bakalar; Col 2; Ln 23 & Col 5; Ln 7-8) and to produce a lens with reduced production time and cost, and without the occurrence of birefringence and/or the need for expensive external heating of cooling requirement (Shiao; Col 4; Ln 5-9).

Referring to claim 2 the limitation of claim 1 are rejected as cited above.

Shiao does not expressly disclose feed orifice characteristic

Bakalar teaches the characteristics of gate being large as possible as cited above.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to design a large gate as taught by Bakalar in fabricating a light duct as taught Shiao. The rational to do so would have been to allow the injected mold to flow as freely as possible (Bakalar; Col 2; Ln 23).

Referring to claim 3 the limitation of claim 1 are rejected as cited above.

Shiao does not expressly disclose flow rate.

Bakalar teaches relationship between gate/orifice size and flow rate as cited above.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the flow speed depending on the size of the orifice as taught by Bakalar in fabricating a light duct as taught Shiao. The rational to do so would have been to produce a lens having a minimum stress (Bakalar; Col 5; Ln 7-8)

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Referring to claim 4 the limitation of claim 1 are rejected as cited above.

Shiao does not expressly disclose temperature regulating range

Bakalar teaches "The female mold is maintained between 195 °F and 250 °F and the male mold is maintained between 140°F and 170°F for producing lens blanks have a normal thickness of 1.5 to 5 mm." (Col 5; Ln 48-53).

It would have been obvious to one of ordinary skilled in the art at the time the invention was made to use optimize the temperature range as taught by Bakalar in fabricating a light duct as taught by Shiao. The rational to do so would have been to obtained desired thickness of lens (Bakalar; Col 5; Ln 53)

Referring to claim 5 the limitation of claim 1 are rejected as cited above.

Shiao additionally teaches "designing a mold which contains at least one over flow system each comprising an overflow channel communicated with an overflow pocket of a predetermined dimension" (Col 4; Ln 33-39). Fig 1 depicts overflow orifice as number 18 which is lateral in symmetry to said feed orifice.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to included and overflow orifice as taught by Shiao. The rational to do so would have been to collect the excess thermoplastic material which is squeezed out during compression stage (Shiao; Abstract)

Referring to claim 6 the limitation of claim 1 are rejected as cited above.

Shiao additionally teaches designing an overflow pocket with the mold of a predetermined dimension.

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to design an overflow pocket and call it rectangular section of feed orifice in fabricating a light duct as taught Shiao. The rational to do so would have been to collect the excess thermoplastic material which is squeezed out during compression stage (Shiao; Abstract)

Referring to claim 7 the limitations of claim 5 are rejected as cited above.

Shiao additionally teaches placing overflow pock of predetermined size of inlet corresponding to said lateral overflow orifice as cited above.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to design an overflow pocket and place it in lateral position to inlet in fabricating a light duct as taught Shiao. The rational to do so would have been to collect the excess thermoplastic material which is squeezed out during compression stage (Shiao; Abstract)

Referring to claim 8 and 9 the limitations of claim 1 are rejected as cited above.

Shiao additionally teaches “compressing the mold dies to reduce the thickness of the mold cavity and urge the plastic into the overflow pockets; switching the injection machine into a pressure-holding mode for reducing backflow and post shrinkage during and after compression” (Col 4; Ln 54-59).

It would have been obvious to one of ordinary skilled in the art at the time the invention was made to perform compacting and holding step to applied injected material in fabricating a light duct as taught by Shiao. The rational to do so would have been to

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reduce the thickness of the mold cavity and urge plastic into the overflow pockets (Shiao; Col 4; Ln 55-57).

Referring to claim 11 the limitations of claim 1 are rejected as cited above.

Shiao additionally teaches "In a typical process for the injection-molding of plastic lenses, plastic resins, such as polycarbonate (PC) or polymethylmethacrylate (PMMA), are initially heated to a molten state. Then, the molten plastic is injected into a mold cavity..." (Shiao; Col 1; Ln 15-19)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use PMMA in fabricating light duct as taught by Shiao. The rational to do so would have been because of its thermodynamic compatibility (Soane; [0100]).

Referring to claims 12 and 13 the limitation of claim 1 are rejected as cited above.

Shiao additionally teaches making a plastic lens by means of injection, compression and pressure-holding mode as cited in Col 4; Ln 30-68). The teaching does not expressly disclose the exact temperature, pressure, flow rate or the hold time. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the teaching of Shiao in deriving at claimed temperature, pressure, flow rate and hold time. The rational to using the injection/compression process in fabricating a light duct is because the process enables the production of relative thin concave plastic lenses to be made with reduced

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production time and cost, and without the occurrence of birefringence, and/or the need for expensive external heating or cooling requirement. (Shiao; Col 4; Ln 4-8)

Referring to claim 14 -an electronic display arrangement suitable for mounting on a frame of the pair of spectacles type or on a specific system for positioning in front of the eyes of a user, the arrangement comprising at least one light duct can be fabricated by method taught by Spitzer and prior art teaching of applicant specification.

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Spitzer, Shiao and Bakalar as applied to claim 1 above, and further in view of Soane et al (Pub No.: US 2002/0091174) (hereinafter Soane)

Referring to claim 10 the teachings for Shiao Spitzer and Bakalar are detailed in the rejection of claims 1-9 under 35 USC 103(a) above.

None of the stated reference expressly discloses using Zeonex

Soane teaches using Zeonex as molding material for optical lens (¶ [0112]).

It would have been obvious to one of ordinary skill in the art at time the invention was made to use Zeonex as thermoplastic material in fabricating a light duct as taught above. The rationale to do so would have been because of its thermodynamic compatibility (Soane; ¶ [0100])

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6023372 A cited on the international search report for PCT/FR2004/050555 is cumulative to Spitzer et al...

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VISHAL I. PATEL whose telephone number is (571)270-7660. The examiner can normally be reached on Monday to Thursday; 8:30AM - 6:00PM and alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton I. Cano can be reached on (571)272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/VISHAL I. PATEL/
Examiner, Art Unit 4122

/Timothy J. Kugel/
Primary Examiner, Art Unit 1796

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